



Carbohydrates



"I need more energy!"

Why do we need carbohydrates?

- ◆ Supply the main source of energy for the body
- ◆ Are easily used by the body for energy
- ◆ Can be stored in the muscles for exercise
- ◆ Provide lots of vitamins, minerals and fiber

How much carbohydrate do we need?

Each gram of carbohydrate provides 4 calories. You need anywhere from 40-60% of your calories from carbohydrate. There is no specific Recommended Daily Allowance (RDA) for carbohydrate. However, the *source* of the carbohydrate is important. Carbohydrates can be either simple or complex.

Simple carbohydrates :

- ◆ simple sugar units that your body can easily and quickly use for energy
- ◆ include sugars, candies, sweetened gum, sweetened sodas, cookies, cake, etc.

The Dietary Guidelines for Americans suggest: "*Choose beverages and foods to moderate your intake of sugars*". Natural sources of simple sugar such as the fructose in an apple or lactose in a glass of milk are not the sugars that you need to worry about. Rather, it is *added sugar* that you need to be aware of. Excess intake of sugary foods may increase incidence of dental cavities or take the place of more nutritious foods in your diet. Look at the list of ingredients on the food label for terms that mean sugar is added. See the following table for a list of such terms.

Corn syrup	Sugar	Brown sugar	Maple syrup
Honey	Sucrose	Maltose	High-fructose corn syrup
Molasses	Glucose	Invert sugar	Confectioner's sugar (powdered sugar)
Raw sugar	Dextrose	Chocolate	Fruit juice concentrate
syrup	Lactose	Fructose	

Many people get a lot of added sugar from beverages. Take a look at the following table. Which beverage provides the most nutrition for the calories?

Beverage, 8 ounces	Calories	Added sugar (g)	Other nutrients
Milk, 1% fat	95	0 g	Protein, calcium, vitamin D
Chocolate milk, 1% fat	142	12 g	Protein, calcium, vitamin D
Orange juice	102	0 g	Vitamin C, potassium
Gatorade	57	14 g	Potassium, sodium
Cola	93	24 g	None

You can see that a glass of soda offers little nutrition besides added sugar!

Complex carbohydrates:

- ◆ sugar units linked together in chains (also known as starches)
- ◆ must be broken down during digestion to provide your body with energy.
- ◆ include pastas, whole grains, cereals, dried beans and starchy vegetables such as potatoes and corn.

The Dietary Guidelines recommend eating a variety of grains daily, especially whole grains. *Whole grains* provide complex carbohydrate and tend to have more nutrients and fiber than *refined grains*. Eating plenty of whole grains may reduce your risk of heart disease. Look for the word "whole" in the list of ingredients as in whole wheat flour or whole wheat bread. See examples below.

Whole wheat bread Whole wheat pasta Brown rice Cracked wheat	Whole grain corn Whole grain cereals Whole rye	Oatmeal Whole oats Bulgur
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The Dietary Guidelines also recommend eating a variety of fruits and vegetables every day. Fruits and vegetables are carbohydrate sources also. If you think about the Food Guide Pyramid, the biggest sections come from carbohydrate sources (grains, fruits and vegetables). Our diets should reflect this and be composed of mostly carbohydrates, especially whole grains, fruits and vegetables.

Words to Know

- ◆ Simple carbohydrates - simple sugar units that your body can easily and quickly use for energy
- ◆ Complex carbohydrates - several sugar units linked together, e.g. starches
- ◆ Enriched - the addition of nutrients that are already present in foods to levels that meet specific government standards
- ◆ Fortified - the addition of nutrients to foods during processing
- ◆ Whole Grains - grain containing all parts of the wheat kernel including the bran
- ◆ Refined grains - grain that has had part of the wheat kernel removed in processing

